UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,662	07/20/2001	Ziya Aral	61628-05744	2628

758	7590	07/11/2005	EXAMINER

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ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/910,662	ARAL ET AL.
Office Action Summary	Examiner	Art Unit	
	Nghi V. Tran	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>20 April 2005</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-11 and 18-26* is/are pending in the application.

   4a) Of the above claim(s) *12-17* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-11 and 18-26* is/are rejected.

7) ☐ Claim(s) *1,3 and 5* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

    1. ☐ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____.

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 1, 3, and 5 are objected to because of the following informalities: "I/O" is

understood for --Input/Output--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

3.   Claims 1 and 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention.

4.   With respect to claims 1 and 3, the applicants wrote, "without requiring a

consolidation of the series of write transactions;" (emphasized added). The examiner

cannot find any support for this limitation. The examiner considers the "without" as a

negative limitation. According to MPEP2173.05(i), "Any negative limitation or

exclusionary proviso must have basis in the original disclosure". Since the applicants

does not positively describe that storing the copy in at least one of a series of files

without requiring a consolidation of the series of write transactions, the examiner

consider the limitation "without requiring a consolidation of the series of write

transactions" as a new matter.

Claim Rejections - 35 USC § 102

· 5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claims 1-6, 9-11, 18-21, 23, and 25 are rejected under 35 U.S.C. 102(e) as being

anticipated by Yanai et al., U.S. Patent No 6,502,205 (hereinafter Yanai).

7.   With respect to claims 1, 3, and 5, Yanai teaches a system for mirroring write

operations from a local storage system onto a remote storage system [see abstract and

figs.1-4], the system comprising:

- an asynchronous mirroring driver resident in the local storage system for

   intercepting I/O transactions to a storage disk of the local storage system,

   identifying a series of write transactions to said storage disk, making a copy of

   the series of write transactions, and storing said copy in at least on of a series

   of files that are created on a file-system of the local storage system without

requiring a consolidation of the series of write transactions [col.3, ln.55 - col.4,

ln.25 and col.5, lns.19-67 "an asynchronous mirroring and storing the copy

without requiring a consolidation of the series of write transactions" is

interpreted as the adaptive copy mode which transfer data from the primary

volume to the second volume and do not wait for receipt acknowledgment or

synchronization to occur];

- a first asynchronous mirroring coordinator [12 i.e. host A] resident on the local

  storage system for invoking a file transfer system to transmit the series of files

  on local file-system of the local storage system to a file system of the remote

  storage system via a non-proprietary network protocol [fig.1 and col.19, ln.65

  - col.20, ln.64]; and

- a service that sends the series of files to a network to which a remote storage

  system is connected [34 i.e. service processor].

8.   With respect to claims 2,4 and 6, Yanai further teaches the system claim 1

further comprising:

- a second asynchronous mirroring coordinator [52 i.e. host B] resident on the

  remote storage system for detecting the series of files on the file system of

  the remote storage system, opening the files and reading the copies of the

  series of write transactions in these files [fig.1]; and

- an asynchronous mirroring driver resident on the remote storage system for

  receiving the copies of the series of write transactions from the second

asynchronous mirroring coordinator and issuing the transactions to a remote

device connected tot the remote storage system which is configured to mirror

the local storage device on the local storage system [col.3, ln.55 - col.4, ln.25

and col.5, lns.19-67].

9.   With respect to claims 9-11, Yanai further teaches the asynchronous mirroring

driver intercepts all I/O transactions in the system [36 i.e. disk adaptor].

10.   With respect to claims 18-20, Yanai further teaches the asynchronous mirroring

driver intercepts a transaction affecting the content or organization of a disk [col.20,

ln.41 - col.21, ln.38].

11.   With respect to claims 21, 23, and 25, Yanai further teaches the series of write

transactions is one of the plurality of series of I/O transactions that are respectively

retained in corresponding ones of the series of files, and individual ones of the series of

files include pointers to accommodate sequencing the series of files, whereby a

transaction level record of changes to the storage disk of the local storage system is

provided for the remote storage system [col.21, ln.40 - col.22, ln.40 and col.23, ln.45 -

col.24, ln.62].

12.   With respect to claims 22, 24, and 26, Yanai further teaches the plurality of series

of I/O transactions include at least one formatting transactions and/or at least one

partitioning transaction [col.5, lns.19-67].

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

14.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanai as

applied to claims 1, 3, and 5 above, and further in view of Cannon et al., U.S. Patent

No. 5,673,382 (hereinafter Cannon).

15.   With respect to claim 7, Yanai is silent on individual ones of the series of the files

comprise: a Header portion that includes information on the total size of the file; an I/O

Control Block portion which indicates address offsets where each transaction in the file

is to be stored on the remotely located destination storage system, and which further

indicates the size of the data for each transaction; and a Data portion which contains

the data for each transaction in the file.

In a communication system, Cannon discloses individual ones of the series of the

files comprise:

- a Header portion that includes information on the total size of the file [col.8, lns.44-46];

- an I/O Control Block portion which indicates address offsets where each transaction in the file is to be stored on the remotely located destination storage system, and which further indicates the size of the data for each transaction [col.8, lns.43-44]; and

- a Data portion which contains the data for each transaction in the file [col.8, lns.41-46].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Yanai in view of Cannon by including a Header portion on the total size, indicating an I/O Control Block portion, and containing a Data portion for each transaction in the file because this feature keeps track of each transaction (i.e. the size of the file, the size of data for each transaction and the data portion). It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Yanai in view of Cannon in order to provide disaster recovery [Cannon, see abstract].

16.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over both Yanai and Cannon as applied to claim 7 above, and further in view of Durflinger et al., U.S. Patent No. 5,713,014 (hereinafter Durflinger).

17.   With respect to claim 8, both Yanai and Cannon are silent on the Header portion

further includes: a pointer to the I/O Control Block portion which indicates the offset

where the I/O Control Block portion of the file begins; and a pointer to the Data portion,

which indicates the offset where the Data portion of the file begins.

In a communication system, Durflinger discloses the Header portion further

includes: a pointer to the I/O Control Block portion which indicates the offset where the

I/O Control Block portion of the file begins; and a pointer to the Data portion, which

indicates the offset where the Data portion of the file begins [col.11, lns.13-37].

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention was made to modify both Yanai and Cannon, and further in view of

Durflinger by indicating the I/O Control Block and Data portion of the file begins because

this feature indicate where the I/O control block portion begins in the file and where the

data begins in the file. It is for this reason that one of ordinary skill in the art at the time

of the invention would have been motivated to modify both Yanai and Cannon, and

further in view of Durflinger in order to access the files easier.

Response to Arguments

18.   Applicant's arguments with respect to claims 1-20 have been considered but are

moot in view of the new ground(s) of rejection.

Conclusion

19.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

20.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Nghi V. Tran whose telephone number is (571) 272-

4067. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Zarni Maung can be reached on (571) 272-3939. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Nghi V Tran
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Art Unit 2151

NT

ZARNI MAUNG
SUPERVISORY PATENT EXAMINER